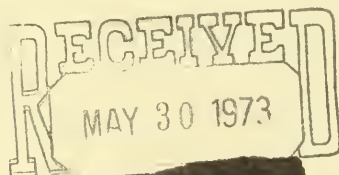
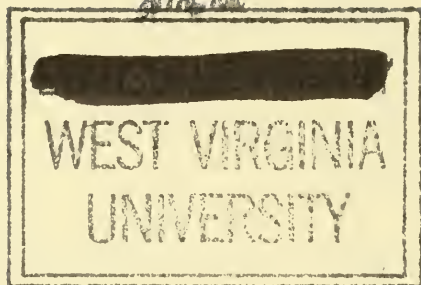


# STRIP MINING

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## Preface

The purpose of this work is to aid those interested in the history, development and problems associated with the strip mining of coal in the United States. Thus references to other applications of strip mining—iron ore, bauxite, etc.—have been excluded as have references to operations outside the United States. Not all omissions can be credited to selectivity, and the compiler welcomes additions or corrections.



# Introduction

The strip mining of coal is old as a practice but new as a problem. It may be assumed that the earliest coal mining in North America was what would now be called strip mining. Certainly the settlers could do little but work along an outcrop, removing the overburden by hand. When the overburden became too heavy for hand removal, draft animals and scrapers were employed. However, the amount of coal which could be obtained by such methods was obviously limited. Increasing demand and availability of the necessary capital both dictated and made possible a shift to underground mining. Thus the importance of strip mining declined, and production appears to have been of only local significance by the 1830's.

The invention of the steam shovel by William S. Otis in 1839 heralded the beginning of "modern" strip mining. For in many respects, the history of strip mining is the history of the development of increasingly powerful machinery. The first recorded use of the steam shovel for stripping coal was in 1877 near Pittsburg, Kansas. By 1881 the steam shovel was being used for stripping "on an extensive scale" in the anthracite fields around Hazleton, Pennsylvania. Within a few years, its use was fairly common.

The following decades saw many improvements in strip mining equipment. A revolving type steam shovel mounted on short sections of rail improved efficiency, as did the introduction of the dragline. The electrification of stripping machinery, starting about 1912, repre-

sented a major advance. Walking draglines began to be used in the late 1930's. Yet in spite of these and other improvements, equipment remained primitive by present standards. The first steam shovels had a capacity of only one cubic yard. Capacity grew slowly; by the start of World War II only a few machines had a capacity of as much as 35 cubic yards.

The relatively primitive nature of the early equipment does much to explain the fact that strip mining attracted little public attention for most of its history. While the early steam shovel could not produce a great amount of coal, neither could it do great harm. Even if one desired to do so, it would be all but impossible to overturn tens of thousands of acres of land with equipment having a dipper capacity of only a few cubic yards. Thus there were few published complaints about strip-ping before World War II. Most of these centered around the damage done to good farmland and the subsequent reduction in the local tax base. West Virginia was the only state to impose any significant regulations on the strip mining industry before the War and that not until 1939.

The post World War II period saw a vast increase in the power and versatility of equipment available to the strip mining industry. The most spectacular example is in the dipper capacity of the shovels. In 1941, Hanna Coal Company's largest shovel had a dipper capacity of 17 cubic yards; the Company's famous "Gem of Egypt" has a dipper capacity of 135 cubic yards. Nor is this the largest machine. The Central Ohio Coal Company's "Big Muskie," placed in operation in 1969, has a dipper capacity of 220 cubic yards. The development of what might be termed supporting equipment has followed apace.

Strip miners now had not only the capacity but also the incentive to increase production. Given the availability of adequate equipment, strip mining has become much more profitable than deep mining in many areas.



This is so for many reasons: productivity per man is higher, capital requirements are lower and the entire operation is more flexible. Thus it is hardly surprising that strip mining increased rapidly. In 1940, 9.2 percent of the bituminous coal and lignite produced in the United States was mined by stripping; by 1950 the figure was 23.9 percent and is now approximately 35 percent.

The rapid expansion of strip mining after World War II put the industry on a collision course with public opinion. The principal reason was doubtless the enormous increase in the amount of land being stripped. However, there were other reasons, the two most important of which appear to have been: (1) the intensive stripping of Appalachia. Stripping mountainous areas produces spectacular, highly visible scars and often causes great damage to the property of those living in the valleys. Unfortunately for the strippers, their move in force into Appalachia coincided with the latest re-discovery of the region by the American public. Thus the activities of the strippers and the protests of their opponents were given wide press and television coverage. (2) The rise of the "ecology movement." For the first time in the United States, those concerned with the environment have become a force to be reckoned with. Strip mining was an obvious target, and the environmentalists have made the most of it. In this, they have doubtless been aided by the traditionally inept public relations of the coal industry.

In terms of sheer volume, the issue would now appear to be between the abolitionists and the reclamationists. The abolitionists, citing the worst examples in Appalachia, maintain that adequate reclamation is impossible. The reclamationists, citing the best examples in Indiana, maintain that the stripping/reclamation cycle actually increases the value of the land. Only a few seem to be willing to recognize—at least in public—that there are

obvious and substantial differences between stripping on flat land and on a forty degree slope.

The increasing energy requirements of the country and the shortage of other fuels make nation-wide abolition of stripping seem unlikely in the near future. Thus disputes over practices and policies will continue. There will doubtless be some variations in both theme and tone. For example, much of the stripping may shift from Appalachia to the Western Plains. However, the basic concerns—economic, political and philosophical—will remain.

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# Reclamation

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